IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicant: §
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MICHAEL KAGAN ET AL. §
§
Serial No.: 10/052,500 §
§
Filed: January 23, 2002 §   Group Art Unit: 2157
§
For: DOORBELL HANDLING WITH §   Attorney
PRIORITY PROCESSING §   Docket: 3091/20
FUNCTION §
§
Examiner: Sargon N. Nano §

Commissioner of Patents and Trademarks
Washington, DC 20231

REPLY BRIEF

Sir:

This is in reply to the United States Patent and Trademark Examiner's Answer

mailed November 5, 2007, which reply is being made on or before January 5, 2008.

REMARKS

The Examiner has rejected claims 1-29 under § 102(e) as anticipated by Gronke, US Patent No. 6,888,792 (henceforth, "Gronke '792").

Gronke '792 teaches a method by which nodes communicate with each other over a plurality of fabrics. Each node has a set of physical ports associated with each fabric and a map that associates physical ports with virtual ports. Each node includes a network interface controller (NIC) **18**, for example a host channel adapter (HCA) **210** or a target channel adapter (TCA) **242**, that associates the node's data transfer operations with respective virtual ports. When a fabric fails, NIC **18** remaps the virtual ports associated with the failed fabric to virtual ports that are associated with functioning fabrics.

The node requests NIC **18** to perform direct memory access data transfer operations by posting descriptors **23** of data transfer operations in a send queue **21** or in a receive queue **19** and then ringing the associated doorbell **25** or **27**. In response to being notified by the ringing of a doorbell of NIC **18** that a descriptor **23** has been posted in a send queue **21** or in a receive queue **19**, NIC **18** reads the descriptor **23** and performs the corresponding direct memory access data transfer operation.

The Grounds of Rejection in the Examiner's Answer are identical to the rejections of the Office Action mailed February 23, 2006. Applicant's Appeal Brief filed July 23, 2007 already has addressed these grounds of rejection. Applicant respectfully takes the present opportunity to add the following observations about the Grounds of Rejection.

In rejecting independent claim 1, the Examiner wrote that Gronke '792 teaches:

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writing a second descriptor to a second one of the doorbell addresses, the second descriptor defining a second message to be sent over the network (see co. 2 lines 56 – col. 3 line 22 and fig. 1B, Gronke discloses descriptors that identify send/receive operation)

The citation from Gronke '792 teaches writing descriptors **23** to send queue **21** and receive queue **19**, not to doorbells **25** or **27**.

In rejecting independent claim 10, the Examiner wrote that Gronke '792 teaches:

...writing a second descriptor to a second doorbell address of the DMA engine, the second descriptor defining a second operation for execution by the DMA engine (see col. 3 line 58 – col. 4 line 13)...

The citation from Gronke '792 does not teach writing descriptors to doorbells. See in particular column 4 lines 2-5:

A consumer 8 posts descriptors, or places the descriptors in a wok queue <u>then rings a doorbell</u> to notify the NIC that work has been placed in the work queue. (emphasis added)

The descriptors are written to the work queue, not to the doorbell.

In rejecting independent claims 15 and 25, the Examiner wrote that Gronke '792 teaches:

a doorbell handler, which is coupled to a range of doorbell addresses...so as to receive the second descriptor written by the host processor to the second doorbell address...(see col. 9 lines 42-64 and figs. 9 and 1B).

In rejecting independent claim 24, the Examiner wrote that Gronke '792 teaches:

a doorbell handler, which is coupled to a range of doorbell addresses...so as to receive the second work request written by the host processor to the second doorbell address...(see col. 9 lines 42-64 and figs. 9 and 1B).

The subject of the citation from Gronke '792 is how packets are constructed and scheduled for transmission *after* a doorbell has been rung. There is nothing in the citation about writing descriptors or work requests to doorbells.

The Response to Argument in the Examiner's Answer makes two points.

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The first point is that the claim language fails to recite that the second descriptors are written "directly" to the doorbell, implying that the claims would have been allowable over Gronke '792 had they recited writing descriptors "directly" to the doorbell. Applicant respectfully disagrees about the need for the claims to recite writing descriptors "directly" to the doorbell in order to be allowable over Gronke '792. Gronke '792 does not write descriptors to doorbells at all, in any way, either directly or indirectly.

The second point is that the claims fail to provide a clear distinction between writing a first descriptor and writing a second descriptor. Applicant respectfully disagrees. Independent claims 1, 10, 15, 24 and 25 clearly distinguish the writing of the first descriptor or work request from the second descriptor or work request. The first descriptor or work request is written to a system memory associated with the host processor. The second descriptor or work request is written to a doorbell address.

Respectfully submitted,

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